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## Open Letter to Science Teachers: Before You Lock the Door

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# Open Letter to Science Teachers

## *Before You Lock the Door*

Before closing textbooks and locking classroom doors for the summer, check on several things to help make your teaching more coordinated and meaningful when fall comes.

Make out a tentative schedule for next year's classes. Decide what units to teach and approximately what length each is to be. Include a list of materials you plan to use for each unit. This means chemicals, slides, demonstrations, experiments, models, audiovisual aids, tape recordings, glassware, and anything else you expect to use. Have everything ordered or available for use, so there are no disappointments or holdups when you start teaching again.



**Prof. Harding**

It is most helpful to have films, film strips, and film loops ordered ahead for the dates when you need them. If you want to request them next fall or next winter just before you plan to use them, they may already have been scheduled by others way in advance of that time. In this case, you are forced to use them much later, perhaps when you no longer need them, or else cancel them. This is unfortunate especially if you expected to use that particular visual material to introduce a new topic.

The schedule you set up is a tentative one, but it does give you a working basis for planning next year's classes.

Clean up all aquaria and tanks used as such. If fish are present that can remain in the room during the summer months, provide for them. Check to see if there is a supply of plants present to care for their needs. If fish need care during the summer, perhaps a responsible student can assume the task of caring for and feeding them if you will not be present to do this. A flat piece of glass over the top of an aquarium will prevent water loss.

If you clean some aquaria and plan to leave them without anything in them, partially fill each with clean water so they won't develop leaks and breaks during the summer in areas where they are sealed.

Take care of living rats, white mice, guinea pigs, and the like. Some students may be willing to take them home for the summer. This is a fine idea, but make sure they know how to care for them and what to feed them. If animals require quite a bit of space, make sure this need is met.

If you have frogs, toads, snakes, turtles, lizards, or such left over, you may want to give them their freedom for the summer. If so, take them to a habitat that most nearly matches the one they are used to before turning them loose.

Watch to see that they merge with their environment before you leave the area. Don't neglect them in the laboratory, leaving them unattended and uncared for during those hot summer months.

Check the chemicals you generally use to see if they are present in adequate amounts. This is in addition to the ones needed for the experiments and demonstrations previously indicated. Get them ordered if you haven't already done so.

Many biology teachers have a supply of plants left at the end of the year. Hopefully, your school has a greenhouse, too. Now is the time to take care of the plants in the laboratory and in the greenhouse.

Students may help set out some plants in the schoolyard, or perhaps take them home for oversummering. Dirt in unused pots should be removed from pots, sterilized and stored in bins, boxes, or bags so it is ready for fall. Broken pottery to be used for aerating plant roots should be cleaned, sterilized, and also stored for the future. The same treatment should likewise be given to whole pots.

Don't leave plants in the greenhouse to die from lack of water. Clean the greenhouse and get it organized and ready for fall. It will be so much nicer to use if it is ready and waiting when you need it.

Will you be using new books next fall? Check to see that your order for them went through and that your books will be waiting when it is time for using them.

If you ordered or asked for reference books to be added to the library, check with the librarian to learn whether your books have arrived yet.

Have you ever prepared any "Instant Laboratories" that have proved to be successful? For setting up one, label a shoe box in the following way:<sup>1</sup> "Taste Areas on the Tongue." Inside place the materials needed for the experiment. Put in small jars of sugar, salt, citric acid, and a substance for bitter taste (Epsom salts is satisfactory for this); small beakers or enough paper cups so students may work in pairs in putting materials in water to get them into solution; toothpicks for testing solutions on different parts of the tongue to determine the position of taste receptors; paper cups for students to drink from as they rinse the mouth after each taste test; and taste-test paper for determining tasters and nontasters of phenylthiocarbamide. The taste-test paper may be purchased from American Genetic Association, 1507 M Street N.W., Washington, D.C. 20005. The cost is four cents a sheet, or three cents a sheet if fifty or more sheets are purchased. Each piece can be cut into small squares so that one or two sheets can supply an entire class.

By creating a number of such laboratories ahead of time, you save on time and effort when you are ready to teach them.

Have you taken care of your personal membership in organizations and so-

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<sup>1</sup> From *Creative Biology Teaching* by Harding, Volker, Eagle.

cieties to which you belong? Some subscriptions may fall due now. If taken care of immediately, this insures uninterrupted membership.

What cultures did you use during the past several months? Are any present in the laboratory that need reculturing, or that ought to be sterilized and disposed of? Take care of these before summertime starts. Clean up the dishes that were used if they are reusable and sterilize them.

Have you thought of some new ways of approaching your subject this fall? You may want to make more use of the overhead projector. If you've been using black drawings on acetate, add some color. In cell biology give structures a new look with color added.

A styrofoam model of DNA may help some student understand the action and meaning of that important material.

A three-dimensional plaster model of the inside of a crayfish or a single cell could mean the difference between organization of a structure and chaos to another student.

A portion of an interesting talk or lecture you listened to and taped may stimulate thought for an exciting discussion of ecology or air pollution. Carry your tape recorder to meetings and record some of the interesting things you hear. Perhaps they will offer that new approach to a subject you have been looking for.

Poems or biographical sketches are a good basis for introducing some new topics to your class. Treasure, keep, and use them and look for new ideas at every point.

Plan some lessons around a flannelgraph. Cut out pictures or colored paper on which you draw pictures and glue pieces of flannel or sand paper on the back of each. As you present a lesson, place the pieces of paper on the flannelgraph and talk about them. A few flannelgraph presentations during the year arouse interest in students and are a different approach in presenting new concepts.

You ask, "When will I get all these things done?"

Many students are excellent assistants in the laboratory. They are of invaluable help in getting most of these things done. Show or tell them what you want them to do and let them go after the job.

Even in planning units for the year students can be of help. Ask them what they enjoyed in your course and why they enjoyed it, and they'll come up with some excellent ideas for your teaching. They will tell you why some laboratories meant more than others did and why some discussions gave them little or nothing. Build on some of their ideas.

And when you have accomplished the things suggested here, turn the key in the lock and have a good summer, knowing that when you return in the fall you will have the situation well in hand and be ready to start a successful year of teaching.

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